

Applicant : Nesbitt W. Hagood, IV et al.
Serial No. : 09/584,881
Filed : June 1, 2000
Page : 2

Attorney's Docket No.: 10722-005001

a¹ correct.
an electrical circuit connected across the transducer such that a peak voltage experienced by the transducer is greater than two times higher than any peak voltage of an open circuit transducer due to the disturbance alone, the electrical circuit including

a rectifier circuit including first and second input terminals and first and second output terminals, the first and second input terminal being connected across first and second terminals of the transducer,

an inductor including first and second terminals, the first terminal being connected to the first output terminal of the rectifier circuit, and

a subcircuit connected to the second terminal of the inductor and the second output terminal of the rectifier circuit, the subcircuit including a switch, and

a storage element connected to the electrical circuit for storing extracted power.

a² cont.
8. (Amended) A system for extracting power, comprising:

a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance,

an electrical circuit connected across the transducer such that a peak voltage experienced by the transducer is greater than two times higher than any peak voltage of an open circuit transducer due to the disturbance alone,

a storage element connected to the electrical circuit for storing extracted power, and
an independent power source for supplying power to the electrical circuit.

9. (Amended) A system for extracting power, comprising:

a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance, and

an electrical circuit connected across the transducer such that a peak of the integral of the current onto and off the transducer is greater than two times higher than any peak of an integral of a current of a short circuit transducer due to the disturbance alone, the electrical circuit including

an inductor including first and second terminals, the first terminal being connected to a first terminal of the transducer,

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cont. a first subcircuit connected to the second terminal of the inductor and a second terminal of the transducer, the first subcircuit including a switch, and
a second subcircuit connected to the second terminal of the inductor and the second terminal of the transducer, the second subcircuit including a switch, and
a storage element connected to the electrical circuit for storing extracted power.

10. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance, and
an electrical circuit connected across the transducer such that a peak of the integral of the current onto and off the transducer is greater than two times higher than any peak of an integral of a current of a short circuit transducer due to the disturbance alone, the electrical circuit including
a rectifier circuit including first and second input terminals and first and second output terminals, the first and second input terminals being connected across first and second terminals of the transducer,
an inductor including first and second terminals, the first terminal being connected to the first output terminal of the rectifier circuit, and
a subcircuit connected to the second terminal of the inductor and the second output terminal of the rectifier circuit, the subcircuit including a switch, and
a storage element connected to the electrical circuit for storing extracted power.

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cont. 12. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance, and
an electrical circuit connected across the transducer such that a peak of the integral of the current onto and off the transducer is greater than two times higher than any peak of an integral of a current of a short circuit transducer due to the disturbance alone,
a storage element connected to the electrical circuit for storing extracted power, and
an independent power source for supplying power to the electrical circuit.

Applicant : Nesbitt W. Hagood, IV et al.
Serial No. : 09/584,881
Filed : June 1, 2000
Page : 4

Attorney's Docket No.: 10722-005001

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13. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a mechanical disturbance,
an electrical circuit including switching electronics connected across the transducer, the electrical circuit including
an inductor including first and second terminals, the first terminal being connected to a first terminal of the transducer,
a first subcircuit connected to the second terminal of the inductor and a second terminal of the transducer, the first subcircuit including a switch, and
a second subcircuit connected to the second terminal of the inductor and the second terminal of the transducer, the second subcircuit including a switch,
control logic which switch the switching electronics at a frequency greater than two times an excitation frequency of the disturbance, and
a storage element connected to the electrical circuit for storing extracted power.

14. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a mechanical disturbance,
an electrical circuit including switching electronics connected across the transducer, the electrical circuit including
a rectifier circuit including first and second input terminals and first and second output terminals, the first and second input terminals being connected across first and second terminals of the transducer,
an inductor including first and second terminals, the first terminal being connected to the first output terminal of the rectifier circuit, and
a subcircuit connected to the second terminal of the inductor and the second output terminal of the rectifier circuit, the subcircuit including a switch,
control logic which switch the switching electronics at a frequency greater than two times an excitation frequency of the disturbance, and

Applicant : Nesbitt W. Hagood, IV et al.
Serial No. : 09/584,881
Filed : June 1, 2000
Page : 5

Attorney's Docket No.: 10722-005001

a3 and
a storage element connected to the electrical circuit for storing extracted power.

a4 cont.
16. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a mechanical disturbance,
an electrical circuit including switching electronics connected across the transducer, control logic which switch the switching electronics at a frequency greater than two times an excitation frequency of the disturbance,
a storage element connected to the electrical circuit for storing extracted power, and
an independent power source for supplying power to the electrical circuit.

17. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance,
an electrical circuit connected across the transducer and capable of extracting power from the transducer and applying power to the transducer during different intervals in the course of the disturbance, the electrical circuit including
an inductor including first and second terminals, the first terminal being connected to a first terminal of the transducer,
a first subcircuit connected to the second terminal of the inductor and a second terminal of the transducer, the first subcircuit including a switch, and
a second subcircuit connected to the second terminal of the inductor and the second terminal of the transducer, the second subcircuit including a switch, and
a storage element connected to the electrical circuit for storing extracted power.

18. (Amended) A system for extracting power, comprising:
a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance,

Applicant : Nesbitt W. Hagood, IV et al.
Serial No. : 09/584,881
Filed : June 1, 2000
Page : 6

Attorney's Docket No.: 10722-005001

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an electrical circuit connected across the transducer and capable of extracting power from the transducer and applying power to the transducer during different intervals in the course of the disturbance, the electrical circuit including

a rectifier circuit including first and second input terminals and first and second output terminals, the first and second input terminals being connected across first and second terminals of the transducer,

an inductor including first and second terminals, the first terminal being connected to the first output terminal of the rectifier circuit, and

a subcircuit connected to the second terminal of the inductor and the second output terminal of the rectifier circuit, the subcircuit including a switch, and

a storage element connected to the electrical circuit for storing extracted power.

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20. (Amended) A system for extracting power, comprising:

a transducer that converts mechanical power to electrical power, the transducer configured for coupling to a disturbance,

an electrical circuit connected across the transducer and capable of extracting power from the transducer and applying power to the transducer during different intervals in the course of the disturbance,

a storage element connected to the electrical circuit for storing extracted power, and
an independent power source for supplying power to the electrical circuit.
